

ORIGINAL ARTICLE

Migration and Psychosis: Evidence from South Asian Communities in Bradford

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ABSTRACT

Objective: To study the risk of psychosis in south Asian communities in Bradford and investigate the role of cannabis as a contributory factor.

Study Design: Naturalistic studies based on electronic summary records.

Place and Duration of Study: The studies were conducted at the Becklin Centre, St James's University Hospital, Leeds and the University of Leeds, School of Medicine from 2018 to 2020.

Material and Method: A service evaluation and research project looking into the role of cannabis included 194 patients admitted to acute psychiatry wards at the Becklin Centre between 1st January 2016 and 30th November 2018. Epidemiological study used electronic summary records provided by the Bradford Early Intervention for Psychosis Service of 15-35-year old newly diagnosed cases with first episode psychosis in 2013-15 and local census data to calculate the risks ratios.

Results: Compared with indigenous white population, Pakistanis in Bradford had significantly higher risk of psychosis (RR: 1.41, 95% CI 1.07, 1.85*). This trend was also seen in Bangladeshi community (RR 1.72, 95% CI 0.91, 3.28*). Indian community, on the other hand, experienced lower risk (RR 0.54, 95% CI 0.20, 1.27).

Conclusion: We found increased risk of psychosis in Pakistani and Bangladeshi communities but not in Indian community.

Key Words: *Bradford, Ethnic, Psychosis, Risk Ratio.*

Introduction

The association between migrant status and schizophrenia was reported in 1930s among Norwegian immigrants in New York^{1,2} which suggested that stressful life experiences played a role in the causation of psychosis. An influential paper, in which the Norwegian psychiatrist Odegaard³ reported the findings of his study in Wisconsin, argued that the increased incidence could be attributed to selective migration of people who were genetically at a higher risk. This was handy munition for anti-immigration politicians of that time and although later studies did not support this claim⁴ it stymied further investigations in the field. Interest in the topic was rekindled in the 1980s by findings concerning first and second generation African

Caribbean in the UK. These studies found that the incidence of schizophrenia was 4-6 times higher than the indigenous white population and was more marked in the second generation.⁵

Whilst an increased incidence of schizophrenia has been consistently reported in people of African Caribbean origin who are resident in the UK, the results are less consistent for those of south Asian origin. In the AESOP⁶ study, the incidence of psychosis, although increased, was raised to a much lesser extent in Asian and non-indigenous white populations. Another study in east London, had found the incidence to be raised in most migrant and minority ethnic groups, however, in Pakistani and Bangladeshi populations, this trend appeared to be evident only in women.⁷

Bradford (population 530,000), a Yorkshire city with a rich industrial history of cotton and woollen mills, is home to a number of immigrant communities from the subcontinent including Pakistanis, Bangladeshis and Indians. Pakistanis from Kashmir in the north of Pakistan are the largest ethnic group (110,000) and there are sizeable Indian and Bangladeshi populations.

Anecdotally, the prevalence of schizophrenia among Pakistanis in Bradford was said to be 2-5 times higher and since the district has the largest proportion

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(20.3%) of people of Pakistani origin in England, there was an opportunity to study these reports in a systematic manner.^{8,9} This was made easier by the existence of an early intervention service (EIPS) in Bradford since 2005, which up until 2016 accepted cases in 15-35 age band and had gathered a substantial case load. According to unpublished EIPS data 29.5% of Bradford EIPS referrals were of Pakistani ethnicity.

Migrant status is now a well-recognised risk factor for the development of psychosis; however, its antecedents have not been that well elucidated. Social disadvantage, unemployment and residence in densely populated inner-city areas are applicable to new immigrants¹⁰ however, it is the use of illicit substances which is often under the spotlight. There are reports to suggest that cannabis use has a greater effect in inducing psychosis in urban environments.¹¹ The evidence, however, is sketchy as there are no systematic studies of migrant populations such as community surveys, possibly due to the difficulty, which any attempt to gather such stigmatising information will encounter. We, therefore, addressed this question indirectly by looking into the drug use histories of patients (ICD-10, F20-29) of various ethnic backgrounds admitted to an acute psychiatry unit in Leeds, a neighbouring Yorkshire city (population 800,000) with sizeable populations of south Asian origin. The findings of this Extended Study Research Project (ESREP) undertaken by two University of Leeds 4th year medical students are reported in this paper.

Material and Methods

As reported in an earlier paper⁸ by Saleem et al in 2019, EIPS Bradford provided anonymous summary data on the number of 15-35 year old newly diagnosed with first episode psychosis in 2013, 2014 and 2015, grouped by ethnicity, gender and 10-year age bands. Permission to use these data for the current study was granted by the Medical Director of Bradford District Care NHS Foundation Trust. EIPS Bradford uses comprehensive assessment of at risk mental state (CAARMS) interviews to establish the diagnoses according to ICD-10 criteria.¹² Only cases with non-affective first episode psychoses were included. The RevMan 5.3 program¹³ was used for analysis and data from the three years 2013-15 were combined. Risk ratios (RRs) with 95% confidence

intervals were calculated and RRs with 95% confidence intervals that did not include 1 were regarded as statistically significant at p<0.05, two-tailed.

Population data were obtained from 2011 census figures published on the website of the Office of National Statistics. Table I shows the basic demographic data derived from Census 2011, which provides the denominators for relative risk (RR) calculations. Compared with British white in Bradford (23% in 15-35 age band), the three south Asian communities are youthful, as 36 – 48% of their members fall in this age band. Another noteworthy observation is female preponderance in British white, Pakistani and Bangladeshi communities. Indian community, on the other hand, has fewer females.

Extended Study Research Project (ESREP) obtained the ethnicity and drug use data from the electronic records of 194 patients admitted with ICD10 (F20-29) diagnosis of psychosis to four acute adult wards at the Becklin Centre between 1st January 2016 and 30th November 2018. Fifteen patients were excluded as no data on cannabis use was available in their electronic case notes. Patients were categorised as either “white British” (n=101, male 72, female 29) or “non-white British” (n=78, male 52, female 26). Parametric and non-parametric tests were used to analyse the data. Research approval was granted by the Leeds & York Partnership Trust Research & Development and ESREP board of the University of Leeds, School of Medicine (R&D 2018-673-SE).

Table I: Census 2011 Data for Bradford†

Ethnicity	Total	15-24	25-35	Men (15-35 year)	Women (15-35 year)
White	333628	38961	38012	37953	39020
Pakistani	106614	18252	23125	20357	21020
Bangladeshi	9863	1744	2058	1751	2051
Indian	13555	1924	2902	2433	2393

†Adapted from Saleem et al⁸

Results

Table II shows the risk of first episode psychosis for each ethnic group. Compared with UK White population, Pakistanis, and Bangladeshis had higher

incidence rates (50, 71, 87/100000 respectively in 15-35 age band). People of Indian origin, on the other hand, had a lower incidence rate (27/100000).

Table II: Incidence of Psychosis and Risk Ratio

	Cases Accepted by EIPS	15-35 Age Band Incidence	Risk Ratio Relative to White†
Ethnic group	2013-2015	Cases/100000 per year	(Confidence Interval)
White	122	50.85	1.0
Pakistani	89	71.69	1.41(1.07-1.85)*
Bangladeshi	10	87.67	1.72(0.91-3.28)‡
Indian	4	27.62	0.54(0.20-1.27)

*Statistically significant at $p < 0.05$ ‡ Trend towards significance †Adapted from Saleem et al⁸

Table III shows the risk of psychosis in 10-year age bands for each ethnic group. The risk compared to whites is significantly higher in 25-35 old Pakistanis (RR 1.92, 95% CI 1.29, 2.87) and Bangladeshis (RR 2.64, 95% CI 1.13, 6.19). In contrast to the British White, British-Indian population appears to show a lower risk for this age group.

Table III: Risk of Psychosis by Ethnic Group and 10-Year Age Bands

		Cases Accepted in	Incidence	Risk Ratio†
Ethnic Group		2013-2015	Cases/100000	(95% CI)
White	15-24	76	65.02	-
	25-35	46	36.74	-
Pakistani	15-24	40	73.05	1.12 (0.77,1.65)
	25-35	49	70.63	1.92 (1.29,2.87)*
Bangladeshi	15-24	4	76.45	1.18 (0.43,3.21)
	25-35	6	97.18	2.64 (1.13,6.19)*
Indian	15-24	3	51.79	0.80 (0.25,2.53)
	25-35	1	11.48	0.31 (0.04,2.27)

*statistically significant at $p < 0.05$ †Adapted from Saleem et al⁸

Table IV Shows gender analysis of risk in the four ethnic groups. We see significantly increased risk for Pakistani and Bangladeshi males (RR 1.46, 95% CI 1.16, 1.83; 2.42, 95% CI 1.17, 5.02)) whereas Indian males showed a non-significant lower risk (RR 0.65, 95% CI 0.21, 2.07).

Table IV: Risk of Psychosis by Ethnic Group and Gender

Ethnic Group		Cases accepted	Incidence	Risk Ratio†
Gender		2013-2015	Cases/100000	(Confidence Interval)
White	Male	75	62.84	1.0
	Female	47	38.98	1.0
Pakistani	Male	66	108.07	1.72(1.24, 2.39)*
	Female	23	36.47	0.94(0.57, 1.54)
Bangladeshi	Male	8	152.29	2.42(1.17, 5.02)*
	Female	2	32.50	0.83(0.20, 3.43)
Indian	Male	3	41.10	0.65(0.21,2.07)
	Female	1	13.92	0.36(0.05, 2.59)

*statistically significant at $p < 0.05$ †Adapted from Saleem et al⁸

The ESREP carried out by medical students CB and FR found a high rate (53.70%) of cannabis use in all acute patients admitted with a diagnosis of ICD-10 psychosis. Table V compares the rates of cannabis use in white British (47.52%) and non-white British (60.26%) patients and shows a trend towards greater use in non-white British ($\chi^2 = 2.864$, $p = 0.091$; OR 1.554, 95% CI 0.824, 2.933).

Table V: History of Cannabis Use in Acute Psychiatric Admissions

Ethnicity	Cannabis user	Non-cannabis user
British White	48 (47.5%)	53(52.5%)
Non-British white	47(60.3%)‡	31(39.7%)

‡ $p = 0.091$

Discussion

Higher Risk of Psychosis in Immigrant Communities

This naturalistic study confirmed the anecdotal reports of higher incidence of psychosis in Bradford South Asian ethnic groups and found that it is true in the case of British Pakistani and British Bangladeshi communities (RRs 1.41 and 1.72). However, the risk for British Indians is lower (RR 0.54), which is surprising but not unique as it has been reported before.¹⁴ Stillman and McKenzie (2009) report the findings of a study of Tongans, who were selected through a ballot and accepted for migration to New Zealand. Compared with those who were unsuccessful in the ballot, the mental health of migrants, particularly women, was significantly

better. This study, however, was carried out only 11 months after resettlement in New Zealand and it will be interesting to see if the Tongans in New Zealand continue to enjoy the positive effect of migration, which Indian migrants in Bradford have experienced over 50 years.

Duration of Untreated Psychosis

This is a noteworthy finding that Pakistani and Bangladeshi group has a significantly higher risk in the age band 25-35 years, which suggests late presentation for treatment and is consistent with anecdotal reports that patients are first taken to traditional healers¹⁵, a practice brought over from their homelands. This practice, unfortunately, prolongs the duration of untreated psychosis¹⁶ which is well known to have an adverse effect on outcome.¹⁷ It may, therefore, pay to promote mental health education amongst ethnic communities and their traditional healers.

Gender differential

In their east London study Coid et al⁷ had found a small increase in the risk of psychosis in Pakistani and Bengali women. We found a higher risk of psychosis in Pakistani and Bengali men, which is more consistent with observations of local mental health practitioners and psychiatrists practising on the subcontinent.

Underlying factors

Schizophrenia is a serious and enduring illness which causes great suffering to affected individuals and their families and generates a huge societal burden. It is imperative, therefore, that we try to find the causes of increased risk of psychosis in ethnic populations. One factor which distinguishes Bradford Pakistanis from other populations is a high rate of first cousin marriages which is reported to be as high as 70%¹⁸ and has increased from 55% found by Darr & Model¹⁹ in 1988, which was an increase on 33% among the mothers of women included in that study. Dobrussin and colleagues²⁰ have shown that the risk of developing schizophrenia is elevated in populations with high consanguinity. Therefore, it may be that the higher incidence of schizophrenia among Bradford Pakistani and Bangladeshi communities is partly due to elevated genetic loading associated with cousin marriages.

Based on the observation that cannabis use can increase the risk of developing schizophrenia,

Hickman et al²¹ quantified the theoretical increase in the incidence and prevalence of schizophrenia that may follow a population wide increase in the use of cannabis. Their models predicted that by 2010, cannabis use will lead to 29% increase in incidence of schizophrenia among men. The ESREP project undertaken by Leeds University medical students CB and FR under the supervision of TM and AC addressed this question as to whether cannabis use is a modifiable risk factor for increased psychosis in ethnic populations. They found a trend towards greater cannabis use in non-white British patients, which suggests that a larger study such as a community survey is needed to find a definitive answer to this question.

The naturalistic design of these studies has some limitations such as reliance on electronic summary data precludes analysis of individual variations. However, this is offset by the fact that research on populations and themes, which tend not to attract the attention of grant giving bodies, can be carried out by workers such as enthusiastic medical students and junior doctors, who are prepared to give their time out of goodwill to the cause of science.

Conclusions

Compared with indigenous whites in Bradford, south Asians of Pakistani and Bangladeshi origin are experiencing a higher risk of psychosis, though, the incidence rates do not appear to be as elevated as in those of African and Caribbean origin. However, this does not completely disprove the anecdotal reports of increased prevalence among some ethnic groups which may be due to delayed recognition suggested by elevated incidence rates in 25-35 age band, thus increasing the duration of untreated psychosis and decreasing the chances of better outcome. In view of the above, it will not be out of place to make the customary call for more research to find the definitive answers. However, the fundamental questions such as genetics of schizophrenia may take more time to be answered or they may be unanswerable as they are integral to human condition. In the meantime there is cause for optimism in that some of the underlying factors such as cannabis use are modifiable with health education and adoption of preventive strategies.

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